

## Message Text

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ACTION EB-11

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P 090515Z JUL 74

FM AMEMBASSY TOKYO

TO SECSTATE WASHDC PRIORITY 3154

LIMITED OFFICIAL USE SECTION 1 OF 4 TOKYO 8963

E.O. 11652: N/A

TAGS: ETRD, GATT, JA

SUBJECT: MTN: PROTOTYPE SECTOR STUDY: ELECTRICAL POWER GENERATING  
MACHINERY: JAPAN

STATE 131800

SUMMARY PARAS 1-13 BELOW CONTAIN INFORMATION IN REPLY TO  
ITEMS MARKED QTE PRIORITY UNQTE REFTEL. PARAS 13-18 INCLUDE  
ADDITIONAL INFORMATION REQUESTED PARA 4 REFTEL. EMBASSY HAS  
ASKED FOR CURRENT DATA RE PRODUCTIVITY, EMPLOYEE WAGES AND  
OTHER COMPENSATION, AND LABOR FORCE COMPOSITION FROM LEADING  
FIRMS IN INDUSTRY AND WILL REPORT AS RECEIVED. END SUMMARY.

1. FOLLOWING DATA FROM QTE 44TH SEMI-ANNUAL ELECTRIC POWER  
SURVEY UNQTE (JUNE 1974) CURRENT AS OF APRIL 1974. INFO  
LISTED AFTER EACH MACHINERY CATEGORY CORRESPONDS TO:

(1) NUMBER AND NAMES MANUFACTURERS IN JAPAN  
(2) EQUIPMENT SCHEDULED FOR SHIPMENT 1974 (3) PERCENT  
DESTINED FOR DOMESTIC CONSUMPTION OF ALL EQUIPMENT  
CURRENTLY ON ORDER (4) CURRENT ANNUAL PRODUCTION

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CAPACITY (5) PLANNED 1978 PRODUCTION CAPACITY. NOS.2-

5 CALCULATED IN TERMS TOTAL CAPACITY OF EQUIPMENT  
MANUFACTURED.

(A) GENERATORS FOR CONVENTIONAL AND NUCLEAR STEAM  
TURBINES AND FOR GAS TURBINES (1000 KW AND LARGER):

(1) 6--HITACHI, LTD. (HI), TOKYO SHIBAURA ELECTRIC CO.  
(TBA) MITSUBISHI ELECTRIC CORP. (MIE), FUJI ELECTRIC  
CO., LTD. (F), MEIDENSHA ELECTRIC MFG. CO., LTD. (ME),  
TOYO DENKI SEIZO K.K. (TY) (2) 11.9 MILLION KW (3)  
58 (4) 12.9 MILLION KW (5) 14 MILLION KW.

(B) GENERATORS FOR HYDROELECTRIC TURBINES, IN-  
CLUDING GENERATORS FOR PUMPED STORAGE TURBINES (1000 KW  
AND LARGER): (1) 6--HI, TBA, MIE, F, ME, TY (2) 4  
MILLION KW (3) 71 (4) 4 MILLION KW (5) 5 MILLION KW.

(C) STEAM GENERATORS (13 KG/SQ. CM. PRESSURE AND  
HIGHER): (1) 5--HI, MITSUBISHI HEAVY INDUSTRIES, LTD.  
(MIHI), ISHIKAWAJIMA HARIMA HEAVY INDUSTRIES, LTD.,  
KAWASAKI HEAVY INDUSTRIES, LTD. (K), TAKUMA CO., LTD.  
(2) 23,000 TONS OF STEAM PER HOUR (3) 72 (4) 23,000  
T/H (5) 45,000 T/H.

(D) CONVENTIONAL AND NUCLEAR STEAM TURBINES AND GAS  
TURBINES (1000 KW AND LARGER): (1) 5--HI, TBA, MIHI,  
F, K (2) 12.8 MILLION KW (3) 53 (4) 12.8 MILLION KW  
(5) 14 MILLION KW.

(E) HYDROELECTRIC TURBINES, INCLUDING PUMPED  
STORAGE TURBINES (100 KW AND LARGER): (1) 5-- HI, TBA,  
MIHI, F, EBARA MFG., CO., LTD. (E) (2) 6.2 MILLION KW  
(3) 38 (4) 6.2 MILLION KW (5) 6 MILLION.

(F) POWER TRANSFORMERS (1000 KVA AND LARGER): (1)  
9--HI, TBA, F, ME, AICHI ELECTRIC CO., NISSHIN  
ELECTRIC CO., TAKAOKA ELECTRIC MFG. CO., OSAKA TRANS-  
FORMER CO. (2) 67 MILLION KVA (3) 87 (4) 70 MILLION KVA  
(5) 70 MILLION KVA.

2. HEAVY ELECTRIC POWER GENERATING EQUIPMENT INDUSTRY  
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DOMINATED BY MIE-MIHI, LICENSEE OF WESTINGHOUSE (WH),  
AND BY HI AND TBA LICENSEES OF GENERAL ELECTRIC (GE).  
ONLY OTHER SIGNIFICANT COMPETITOR, F, HAS 5 PERCENT  
MARKET SHARE. IN 1959 F AND K JOINTLY LICENSED NUCLEAR  
POWER TECHNOLOGY FROM BRITISH GE. AFTER CONSTRUCTION  
ONE PLANT BRITISH GAS-COLORED REACTOR TECHNOLOGY ABANDONED  
BY GOJ IN FAVOR GE AND WH BOILING WATER AND HEAVY  
WATER REACTORS. F IS SIEMENS (W. GER.) LICENSEE FOR

RECTIFIERS AND HYDROELECTRIC TURBINES AND ALLIS-CHALMERS  
LICENSEE FOR PUMP STORAGE TURBINES. E HAS ALLIS-  
CHALMERS LICENSE FOR HYDROELECTRIC TURBINES. ME IS  
LICENSEE OF ASEA (SWEDEN) FOR STEAM TURBINE GENERA-  
TORS AND OF AEG (W. GER.) FOR AIR-BLAST CIRCUIT  
BREAKERS. TY HAS TOWLER BROS. (U.K.) LICENSE FOR  
HYDROELECTRIC TURBINE GENERATORS. I. K., GERMAN, AND  
SWEDISH FIRMS OCCASIONALLY MAKE SPOT SALES BUT HAVE  
NEVER ACTIVELY CHALLENGED ENTRENCHED POSITIONS OF WH  
AND GE.

3. PRINCIPAL DOMESTIC CONSUMERS ARE NINE REGIONAL  
PRIVATE POWER COS., RURAL PREFECTURAL GOVERNMENTS  
WHICH OPERATE POWER STATIONS, AND PRIVATE INDUSTRIAL  
FIRMS. PUBLIC SUPPLY ACCOUNTS FOR 87 PERCENT OF ALL  
ELECTRIC POWER GENERATED.

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FM AMEMBASSY TOKYO

TO SECSTATE WASHDC PRIORITY 3155

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4. UTILITIES REQUIRED TO OBTAIN APPROVAL FOR CAPACITY  
EXPANSION FROM ELECTRIC POWER DEVELOPMENT COUNCIL AND  
APPROVAL FOR ANNUAL CAPITAL INVESTMENT PLANS FROM  
INDUSTRIAL STRUCTURE COUNCIL, BOTH ADVISORY BODIES TO  
MINISTRY OF INTERNATIONAL TRADE AND INDUSTRY (MITI).

MITI MAINTAINS THAT, ONCE PROJECTS APPROVED, IT DOES NOT INTERVENE IN COMMERCIAL NEGOTIATIONS CONDUCTED BY PRIVATE UTILITIES. FOR NEW PLANT UTILITY CO. SELECTS A SUPPLIER WITH WHICH IT OFTEN HAS CONSULTED FROM EARLY STAGES OF PLANNING AND NEGOTIATES CONTRACT ON EXCLUSIVE BASIS. THERE IS NO COMPETITIVE BIDDING. PURCHASE PRICES ONLY RARELY ANNOUNCED AND ARE SINGLE FIGURE FOR EQUIPMENT, ENGINEERING, AND MAINTENANCE SERVICES. UTILITIES IN 60 CYCLE AREA (FROM NAGOYA SOUTH) HAVE CLOSE RELATIONSHIP WITH MIE-MIHI DATING FROM 1930'S AND IN TURN WITH WH TECHNOLOGY AND DESIGN. TBA-HI-BE- GROUP HAS SAME STATUS VS. UTILITIES IN 50 CYCLE AREA (NORTH OF NAGOYA). SINCE EARLY 1950' GE AND WH HAVE CONSISTENTLY IMPORTED ONE PROTOTYPE UNIT OR SET OF NEW EQUIPMENT (CHIEFLY TURBINE-GENERATORS AND NUCLEAR PLANTS) AND THEN LICENSED TO ESTABLISH PRINCIPLE OF LIMITED OFFICIAL USE

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SELLING TWO IMPORTED UNITS PRIOR TO LICENSING. OTHER SALES HAVE OCCURRED WHEN DOMESTIC MFG. CAPACITY INSUFFICIENT TO MEET UTILITY EXPANSION SCHEDULE OR QUICK DELIVERY NEEDED BY PRIVATE INDUSTRIAL PURCHASER. U.S. FIRMS HAVE FEW SALES OPPORTUNITIES FOR POWER TRANSMISSION AND DISTRIBUTION EQUIPMENT BECAUSE JAPANESE TECHNOLOGY AND PRODUCTION CAPACITY SUFFICIENT. EQUIPMENT FOR PREFECTURAL GOVERNMENT POWER PLANTS SOURCED ENTIRELY IN JAPAN.

5. EXCEPTIONS TO GENERAL PRACTICE HAVE BEEN (1) HI-GE AGREEMENT ON GAS TURBINES IN WHICH HI PRODUCES STATIONARY ELEMENTS AND USES US-MADE GE ROTATING ELEMENTS FOR ALL UNITS SOLD WORLD-WIDE (2) NUCLEAR POWER PLANTS-- AMONG 24 PLANTS NOW IN OPERATION OR PLANNED CONTRACTS HAVE BEEN DISTRIBUTED--GE-5, WH-4, TBA-6, MIHI-5, HI-4. (IN PLANTS WHERE GE AND WH PRIME CONTRACTORS PROPORTION OF DOMESTIC EQUIPMENT 51-67 PERCENT VS. OVER 90 PERCENT FOR HI, MIHI, AND TBA PLANTS.)

6. GOJ AND UTILITIES EXPERIENCING GROWING OPPOSITION FROM LOCAL RESIDENTS IN SITTING NEW POWER PLANTS, ESPECIALLY NUCLEAR PLANTS, AND ACCORDING TO PRESS REPORTS NUMBER OF NUCLEAR PLANT CONTRACTS AWARDED TO US FIRMS AT ONE POINT INDUCED EXECUTIVES OF HI, TBA, MIE, MIHI, ME, AND F TO PROTEST TO ITI MINISTER NAKASONE. OPPOSITION PARTY DIET MEMBERS ALSO HAVE ACCUSED TOKYO ELECTRIC POWER CO. (TEPCO) OF FAVORING GE OVER DOMESTIC INDUSTRY IN NUCLEAR PLANT CONSTRUCTION.

7. LOCAL GE AND WH REPS BELIEVE DOMESTICALLY SOLD EQUIPMENT MAY BE PRICED SOMEWHAT HIGHER THAN US-MADE

PROTOTYPE UNITS. FOR EXAMPLE, IN 1973 GE SUBMITTED UNSOLICITED \$18 MILLION BID FOR 2 THYRISTOR UNITS. CONTRACTS WENT TO GE LICENSEES HI AND TBA FOR ONE UNIT EACH AT TOTAL COST OF ABOUT \$300,000 MORE THAN GE BID. TBA AND HI SOON ASKED FOR BUDGET INCREASES TO \$30 MILLION TO COVER RISING COSTS, AND TEPCO BRIEFLY SHOWED RENEWED INTEREST IN GE OFFER BEFORE FINAL COMMITMENT TO HI AND TBA.

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8. TBA, HI, AND MIE-MIHI BID VERY COMPETITIVELY IN US AND THIRD COUNTRIES. IN NOV, 1973 HI WON USG CONTRACT FOR 11 HYDROELECTRIC TURBINES FOR CHIEF JOSEPH DAM ON COLUMBIA RIVER, ALTHOUGH IT CONTRACTED 54 PERCENT OF WORK TO US FIRMS, INCLUDING GE, TO MEET USG REGULATIONS. MIHI RECENTLY WON STEAM TURBINE CONTRACT IN TAIWAN FOR \$8 MILLION WHERE US BIDS WERE \$14-15 MILLION. LOCAL GE AND WH REPS BELIEVE JAPANESE EXPORT PRICES LOWER THAN DOMESTIC PRICES AND THAT POSSIBLY EXPORT PRICES SUBSIDIZED BY DOMESTIC PRICE LEVEL, BUT DATA INSUFFICIENT TO DOCUMENT. THEY ALSO BELIEVE THAT, IF FREER MARKET EXISTED IN JAPAN, IMPORTED US EQUIPMENT PRICES WOULD BE COMPETITIVE BECAUSE US HAS TECHNOLOGICAL ADVANTAGE AND DERIVES ECONOMIES OF SCALE AND AVERAGING OF ENGINEERING COSTS FROM PRODUCING FOR LARGE US MARKET.

9. IN CONTRAST HIGHLY CONTROLLED UTILITIES MARKET, JAPANESE TRADING COS. AND PROCESS CONTRACTORS IN THIRD COUNTRY INDUSTRIAL PROJECTS TAKE FLEXIBLE ATTITUDE TOWARD FOREIGN FIRMS AND ENCOURAGE THEM TO BID (WITHIN LIMITS PERMITTED BY TERMS OF LOAN IN CASE OF TIED GOJ ASSISTANCE TO LDC'S. THIRD COUNTRY PROJECTS ALSO OFFER US FIRMS OPPORTUNITY TO INFLUENCE HOST COUNTRY PARTICIPANTS WHO PLAY ROLE IN SELECTING EQUIPMENT. IN PETROCHEMICAL AND LNG INSTALLATIONS JAPANESE PROCESS CONTRACTORS OFTEN WORK WITH US ENGINEERING COS. OPENING ANOTHER CHANNEL OF INFLUENCE TO US EQUIPMENT MFRS.

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FM AMEMBASSY TOKYO

TO SECSTATE WASHDC PRIORITY 3156

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10. FOLLOWING DATA DESCRIBES RECENT JAPANESE ELECTRIC POWER GENERATION PROJECTS IN LDC'S. INFO LISTED AFTER COUNTRY NAME CORRESPONDS TO (1) DATE OF CONTRACT (2) AMOUNT OF LOAN (3) INTEREST RATE (4) GRACE PERIOD (5) REPAYMENT PERIOD (6) FINANCING ORGANIZATIONS.

(A) MEXICO (1) 1973 (2) 10,000 MILLION YEN (3) 7 PERCENT (4) 3 YRS. (5) 12 YRS. (6) JAPAN EXIM BANK, CITY BANKS.

(B) BRAZIL (1) 1973 (2) 7,200 MILLION YEN (3) 7 PERCENT (4) NONE (5) 10 YEARS AFTER COMMISSIONING (6) JAPAN EXIM BANK, CITY BANKS.

(C) BRAZIL (1) 1973 (2) 12,000 MILLION YEN (3) 7 PERCENT (4) NONE (5) 10 YEARS AFTER COMMISSIONING (6) JAPAN EXIM BANK, CITY BANKS

(D) SINGAPORE (1) 1973 (2) 9,000 MILLION YEN (3) 5.5 PERCENT (4) 5 YRS. (5) 18 YRS. (6) JAPAN EXIM BANK, CITY BANKS.

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(E) MADAGASCAR (1) 1973 (2) 4,200 MILLION YEN (3) 4 PERCENT (4) 7 YRS. (5) 25 YRS. (6) OVERSEAS ECONOMIC COOPERATION FUND.

(F) ECUADOR (1) 1974 (2) 2,680 MILLION YEN (3) 4.75 PERCENT (4) 7 YRS. (5) 20 YRS. (6) JAPAN EXIM BANK, CITY BANKS.

NOTE: COMMISSIONING PERIOD FOR ELECTRIC POWER DEVELOPMENT IS 1.5 - 3 YRS.

11. THERE PRESENTLY NO JAPANESE TECHNICAL SPECIFICATIONS OR LEGAL RESTRICTION ON CAPITAL INVESTMENT, LICENSING, OR IMPORTS WHICH AFFECT FLOW OF TRADE IN ELECTRICAL POWER GENERATION MACHINERY. GOJ SUPERVISION OF UTILITIES IS SOURCE OF ITS INDIRECT INFLUENCE OVER SUPPLIERS OF EQUIPMENT. INFORMAL CONSULTATIONS AMONG MITI, UTILITIES, AND SUPPLIERS OCCUR REGULARLY, AND OLIGOPOLISTIC CHARACTER OF GENERATING EQUIPMENT INDUSTRY SEEMS TO REINFORCE TRADITIONAL MARKETING PATTERNS.

12. GE AND WH HAVE ADAPTED PRAGMATICALLY AND PROFITABLY TO PATTERN WHICH DEVELOPED UNDER GOJ GUIDANCE OF IMPORTING PROTOTYPE AND THEN LICENSING TECHNOLOGY. WH AND GE COMPETE GLOBALLY WITH OWN JAPANESE LICENSEES, BUT LOSSES OF CONTRACTS TO THEM STILL LEAVE WH AND GE ROYALTIES, CONSULTING FEES, AND OCCASIONAL OPPORTUNITIES TO SUPPLY SPECIAL EQUIPMENT. ALTHOUGH GE AND WH RESENT RESTRICTIONS IMPOSED BY PRESENT WAY OF DOING BUSINESS, THEY RECOGNIZE ADVANTAGES OF PRIVILEGED STATUS VS. OTHER FOREIGN FIRMS IN JAPANESE MARKET. THEY WANT TO INCREASE PRESSURE ON JAPANESE TO IMPORT MORE OF THEIR UNITS FROM US, BUT DO NOT WANT TO DAMAGE THEIR PRESENT POSITION.

13. GE NUCLEAR FUEL FABRICATION JOINT VENTURE WITH HI AND TBA ONLY CAPITAL INVESTMENT IN JAPAN OF EITHER US FIRM. LOCAL REPS STATE THEY HAVE GLOBAL QTE LOW PROFILE UNQTE POLICIES AND NO INTEREST IN CAPITAL INVESTMENT IN JAPAN.

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14. JAPANESE TECHNOLOGY THIS FIELD BUILT ON FOREIGN LICENSES, BUT DOMESTIC R & D DEVELOPING RAPIDLY. GE AND WH BELIEVE JAPAN INCREASINGLY WILL HAVE TECHNOLOGY TO OFFER AND THAT JOINT US-JAPAN R&D VENTURES HAVE GOOD POTENTIAL.

15. MITI PUBLISHES ANNUAL QTE CENSUS OF MANUFACTURERS BY ENTERPRISE UNQTE (CME) WHICH COVERS FIRMS WITH 10 OR MORE EMPLOYEES. STATISTICS INCLUDE NUMBER OF FIRMS, EMPLOYEES, CASH SALARIES, SALES, AND GROSS ADDED VALUE. 1970 MOST RECENT VOLUME IN SERIES. CME HAS NO

STATISTICS ON AVERAGE NUMBER OF HOURS WORKED. THIS INFORMATION APPEARS IN QTE YEARBOOK OF LABOR STATISTICS UNQTE (YLS) PUBLISHED BY MINISTRY OF LABOR. YLS, HOWEVER, COVERS ALL FIRMS WITH 5 OR MORE EMPLOYEES, YLS INDUSTRIAL CLASSIFICATIONS LESS DETAILED THAN CME, AND YLS CLASSIFIED FIRMS BY NUMBER OF EMPLOYEES WHERE CME CLASSIFIES FIRMS BY CAPITALIZATION. THUS, USING FIGURES FROM SOURCES NOT STRICTLY COMPARABLE EMBASSY CALCULATED APPROXIMATE 1970 ADDED VALUE PER MANHOUR AND AVERAGE ANNUAL AND HOURLY GROSS CASH WAGES.

(A) FROM CME 1970--MANUFACTURERS OF GENERATORS, ELECTRIC MOTORS AND OTHER ELECTRICAL ROTATIONAL MACHINERY, TRANSFORMERS (EXCLUDING COMMUNICATIONS), SWITCHGEARS, SWITCHBOARDS, AND ELECTRICAL CONTROLS EQUIPMENT CAPITALIZED AT OVER 1,000 MILLION YEN.

NO. OF FIRMS: 28 (INCLUDES ALL 15 FIRMS PARA 1)

NO OF EMPLOYEES : 72,305

TOTAL CASH WAGES: 70,4)6 MILLION YEN

GROSS ADDED VALUE: 182,371 MILLION YEN

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FM AMEMBASSY TOKYO

TO SECSTATE WASHDC PRIORITY 3157

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(B) FROM YLS 1970-- MANUFACTURERS OF ELECTRICAL MACHINERY, EQUIPMENT, AND SUPPLIES WITH 500 EMPLOYEES OR MORE.

AVERAGE NO. HRS. WORKED PER MONTH BY PERMANENT EMPLOYEES (INCLUDING MALE AND FEMALE SALARIED AND PRODUCTION WORKERS): 180.5

(C) 70,305 MILLION YEN TOTAL CASH WAGES//72,305 EMPLOYEES-973,875 YEN PER YR. AVERAGE GROSS CASH WAGES PER EMPLOYEE (EQUIVALENT TO 81,56 YEN PER MO.). 81,156 YEN PER MO./180.5 HRS. PER MO. - 450 YEN PER HR.

(D) 182,371 MILLION YEN GROSS ADDED VALUE/72,305 -2,522,246 YEN AVERAGE GROSS ADDED VALUE PER EMPLOYEE PER YR./ (180.5 AVERAGE HOURS WORKED PER MO. / 12 MOS.) - 1164 YEN AVERAGE ADDED VALUE PER MANHOUR.

(E) YLS 1970 MONTHLY CASH WAGES CORRESPONDING TO PARA 15B GROUP IS 71,804 YEN, NEARLY 10,000 YEN BELOW EMBASSY CALCULATION (PARA 15C). HOWEVER, AVERAGE LIMITED OFFICIAL USE

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NUMBER OF EMPLOYEES 28 FIRMS PARA 15A IS 2,582, PROBABLY HIGHER THAN THE AVERAGE FOR THE FIRMS SURVEYED IN YLS1970. THIS SEEMS TO SUPPORT GENERAL OBSERVATION THAT IN JAPAN WAGE RATES INCREASE WITH SIZE OF FIRM.

16. ACCORDING YLS 1972 (MOST RECENT PUBLICATION IN SERIES) AVERAGE HOURS PER MONTH AND CASH WAGES CORRESPONDING TO PARA 15 B AND E GROUP OF WORKERS WERE 175.8 HRS. AND 98,844 YEN. FOR 1973 ONLY AVAILABLE LABOR STATISTICS SHOW AVERAGE GROSS MONTHLY CASH WAGES PER EMPLOYEE OF 114,231 YEN AND AVERAGE HRS. WORKED PER MO. 182.3. THESE STATISTICS, HOWEVER, COVER FIRMS WITH 30 OR MORE EMPLOYEES WHICH PRODUCE ELECTRICAL GENERATING, TRANSMISSION, DISTRIBUTION, AND INDUSTRIAL APPARATUS. 1973 AVERAGE WAGES FOR EMPLOYEES OF LARGE FIRMS MAY HAVE BEEN MORE THAN 10 PERCENT HIGHER, PERHAPS 130,000 YEN PER MONTH. ADDING 1974'S 30 PERCENT WAGE INCREASE, CURRENT AVERAGE GROSS CASH WAGES FOR EMPLOYEES OF LARGE FIRMS IN THIS INDUSTRY MAY BE MORE THAN DOUBLE THE 1970 FIGURE IN PARA 15C.

17. EMBASSY HAS REQUESTED CURRENT DATA RE PRODUCTIVITY, WAGES AND OTHER COMPENSATION, AND LABOR FORCE COMPOSITION DIRECTLY FROM FIRMS AND WILL REPORT EXAMPLES AS RECEIVED.

18. CY1973 EXPORTS, IMPORTS AND DOMESTIC PRODUCTION  
(MILLION YEN)

A.) SOURCE: MINISTRY OF FINANCE

SITC NO.	ITEM	EXPORTS	IMPORTS
722.111-129	GENERATORS	27,734	4,998
722.131-138	MOTORS	22,238	4,157
722.141-148	TRANSFORMERS	14,669	3,446
722.151-159	RECTIFIERS	6,526	1,283

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722.161-169	MOTOR GENERATORS AND CONVERTORS	2,483	553
722.170	INDUCTORS	2,125	527
722.180	PARTS OF ROTATING ELECTRICAL MACHINERY	14,567	2,181
722.211-219	CIRCUIT BREAKERS, SWITCHES, AND PARTS	24,011	8,031
722.221-229	LIGHTING CONDUCTORS AND ELECTRICAL CIRCUIT PROTECTION APPARATUS AND PARTS	1,289	1,275
722.231-239	SOCKETS, CONNECTION APPARATUS, AND PARTS	10,259	9,221
722.241-249	RESISTORS	17,990	3,783
722.250	SWITCHBOARDS AND CONTROL PANELS	19,251	1,855
722.299	PARTS OF SWITCHBOARDS AND CONTROL PANELS	2,260	354
722.260	PRINTED CIRCUITS	843	996
	TOTALS	166,245	42,660

B.) SOURCE: MITI

ITEM	PRODUCTION
D.C. GENERATORS AND MOTORS	31,301
A.C. GENERATORS	54,407
ELECTRIC MOTORS	274,034
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MOTOR GENERATORS	5,146
MOTOR-USING EQUIPMENT	22,343
RECTIFIERS (EXCEPT COMMUNICATIONS USE)	22,667
CONDENSORS (EXCEPT COMMUNICATIONS USE)	26,592
TRANSFORMERS (EXCEPT COMMUNICATIONS USE)	169,775
THYRISTOR TRANSFORMERS	15,334
SWITCHGEARS AND CONTROL EQUIPMENT	508,314
LIGHTING CONDUCTORS AND REACTORS	9,337
TOTAL	1,139,250
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## Message Attributes

**Automatic Decaptioning:** X  
**Capture Date:** 01 JAN 1994  
**Channel Indicators:** n/a  
**Current Classification:** UNCLASSIFIED  
**Concepts:** DATA, WAGES, TRADE AGREEMENTS, NEGOTIATIONS, ELECTRIC POWER, ELECTRIC GENERATORS, LABOR FORCE, BUSINESS FIRMS  
**Control Number:** n/a  
**Copy:** SINGLE  
**Draft Date:** 09 JUL 1974  
**Decaption Date:** 01 JAN 1960  
**Decaption Note:**  
**Disposition Action:** RELEASED  
**Disposition Approved on Date:**  
**Disposition Authority:** shawdg  
**Disposition Case Number:** n/a  
**Disposition Comment:** 25 YEAR REVIEW  
**Disposition Date:** 28 MAY 2004  
**Disposition Event:**  
**Disposition History:** n/a  
**Disposition Reason:**  
**Disposition Remarks:**  
**Document Number:** 1974TOKYO08963  
**Document Source:** CORE  
**Document Unique ID:** 00  
**Drafter:** n/a  
**Enclosure:** n/a  
**Executive Order:** N/A  
**Errors:** N/A  
**Film Number:** D740181-1042  
**From:** TOKYO  
**Handling Restrictions:** n/a  
**Image Path:**  
**ISecure:** 1  
**Legacy Key:** link1974/newtext/t19740763/aaaacceh.tel  
**Line Count:** 579  
**Locator:** TEXT ON-LINE, ON MICROFILM  
**Office:** ACTION EB  
**Original Classification:** LIMITED OFFICIAL USE  
**Original Handling Restrictions:** n/a  
**Original Previous Classification:** n/a  
**Original Previous Handling Restrictions:** n/a  
**Page Count:** 11  
**Previous Channel Indicators:**  
**Previous Classification:** LIMITED OFFICIAL USE  
**Previous Handling Restrictions:** n/a  
**Reference:** n/a  
**Review Action:** RELEASED, APPROVED  
**Review Authority:** shawdg  
**Review Comment:** n/a  
**Review Content Flags:**  
**Review Date:** 30 JUL 2002  
**Review Event:**  
**Review Exemptions:** n/a  
**Review History:** RELEASED <30 JUL 2002 by elyme>; APPROVED <25 FEB 2003 by shawdg>  
**Review Markings:**

Declassified/Released  
US Department of State  
EO Systematic Review  
30 JUN 2005

**Review Media Identifier:**  
**Review Referrals:** n/a  
**Review Release Date:** n/a  
**Review Release Event:** n/a  
**Review Transfer Date:**  
**Review Withdrawn Fields:** n/a  
**Secure:** OPEN  
**Status:** NATIVE  
**Subject:** MTN: PROTOTYPE SECTOR STUDY: ELECTRICAL POWER GENERATING MACHINERY: JAPAN  
**TAGS:** ETRD, JA, GATT  
**To:** STATE  
**Type:** TE  
**Markings:** Declassified/Released US Department of State EO Systematic Review 30 JUN 2005